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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,256	03/09/2004	Volker Krueger	414-35025-US	2388
44871	7590	05/25/2006	EXAMINER	
MADAN, MOSSMAN & SRIRAM, P.C.			COY, NICOLE A	
2603 AUGUSTA			ART UNIT	
SUITE 700			PAPER NUMBER	
HOUSTON, TX 77057			3672	

DATE MAILED: 05/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/796,256	Applicant(s) KRUEGER ET AL.	
	Examiner Nicole Coy	Art Unit 3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-15 and 17-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-11, 13-15, 17-29, 31-36 is/are rejected.
- 7) ☒ Claim(s) 12 and 30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments and amendments filed 3/21/06 have been fully considered but they are not persuasive. With respect to claims 31 and 34, Applicant argues that Kruspe does not teach positioning a sensor in a vibrational node in a drilling tubular. However, vibrational nodes are inherently present in the drilling tubular of Kruspe, as there is vibrational movement during drilling but Kruspe teaches a stabilizer to prevent this movement in certain locations on the drill string. Kruspe teaches that the non-rotating stabilizer sleeve is fixed to the borehole-wall minimizing all relative radial movements between the sensor and the formation. Thus, as the sensor does not move, it is in a vibrational node. Therefore, Kruspe does teach positioning a sensor in a vibrational node in a drilling tubular.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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3. Claims 2-4, 6-9, 11, 13, 15, ~~17-19~~¹⁷⁻¹⁹, 21-24, 26, 27, 29, 31, 32, 34, and 35 are rejected under 35 U.S.C. 102(e) as being anticipated by Kruspe et al. (US Application Publication 2002/0153136).

With respect to claims 31 and 34, Kruspe et al. discloses a system/method for controlling sensor motion while measuring a parameter of interest in a wellbore formed in an earthen formation, comprising: (a) a drilling tubular (20) conveyed into the wellbore (see figure 1), said drilling tubular (20) having at least one vibrational node (wherein a vibrational node would inherently form at NMR sensor due to placement of non-rotating sleeve 102); and (b) a first sensor (see paragraph [0036]) positioned along the drilling tubular (20) at the at least one vibrational node (see figures 1 and 2), the first sensor measuring the parameter of interest (see paragraph [0026]).

With respect to claims 2 and 17, Kruspe et al. discloses that the first sensor comprises an NMR sensor (see abstract).

With respect to claims 3 and 18, Kruspe et al. discloses that the non-rotating stabilizer is adjustable (see paragraph [0036]), and further comprising a second sensor for detecting motion of the drilling tubular proximate the first sensor (see paragraph [0026]), a diameter of the non-rotating stabilizer being adjusted in response to the detection of motion by the second sensor (see paragraph [0036], wherein the clamping piston pushes out one or more clamping ribs).

With respect to claims 4 and 19, Kruspe et al. discloses that the second sensor comprise an accelerometer (see page 3 paragraph [0026]).

With respect to claims 6 and 21, Kruspe et al. discloses that the wellbore comprises a deviated wellbore (see figure 1).

With respect to claims 7 and 22, Kruspe et al. discloses that the non-rotating stabilizer comprises: a housing attached to said drilling tubular (see figure 2); a sleeve substantially surrounding at least a portion of said housing (see figure 2 numeral 102); a bearing acting cooperatively with said sleeve and said housing for allowing relative motion between the sleeve and the housing (see figure 2 numeral 103); and a rib attached to said housing, said rib extending radially outward from the housing to reduce motion of said first sensor below a predetermined level (see figure 2 numeral 110).

With respect to claims 8 and 23 Kruspe et al. discloses a predetermined level of 2.0 millimeter (wherein the non-rotating stabilizer of Kruspe et al. would inherently reduce the motion of the sensor below 2 mm).

With respect to claims 9 and 24, Kruspe et al. discloses that the rib is a straight rib (see figure 2 numeral 110).

With respect to claims 11 and 26, Kruspe et al. discloses that the rib is an adjustable rib, said adjustable rib adapted to be controllably extended to contact a wellbore wall (see page 4 paragraph [0036]).

With respect to claims 13 and 27, Kruspe et al. discloses that the housing is adapted to displace the center of the non-rotating stabilizer relative to a longitudinal axis of the drilling tubular (see figures 1 and 2, wherein said housing is adapted to displace the center of the non-rotating stabilizer relative to a longitudinal axis of the drilling assembly).

With respect to claims 15 and 29, Kruspe et al. discloses that the first sensor comprises at least one of (i) a density sensor and (ii) a porosity sensor (see page 1 paragraph [0006]).

With respect to claims 32 and 35, Kruspe discloses a substantially non-rotating stabilizer (102) disposed along said drilling tubular to form the at least one vibrational node (wherein a vibrational node is inherently formed), said substantially non-rotating stabilizer (102) reducing motion of said first sensor below a predetermined level (see paragraph [0036]).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kruspe et al. in view of Bostick, III et al. (US Patent Application 2004/0065437).

While Kruspe et al. teaches taking acceleration measurements, Kruspe et al. does not disclose that the sensor specially comprises three mutually orthogonal accelerometers. Orthogonal accelerometers are well known in the prior art for use in deviated wells in order to reflect the true status of the earth formation. See Bostick, III et al. page 3 paragraph [0037]. It would have been obvious to one having ordinary skill in art at the time of the invention to modify Kruspe et al. by including three orthogonal

accelerometers as taught by Bostick, III et al. in order to obtain data on the true status of the earth formation.

6. Claims 10 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kruspe et al. in view of Jurgens (USP 4,011,918).

With respect to claims 10 and 25, Kruspe et al. discloses the claimed invention except for a spiral rib. Stabilizers having spiral ribs are well known in the prior art. See Jurgens column 3 lines 3-19. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kruspe et al. by using the well-known spiral ribs on the stabilizer as they are a type of rib commonly used in the art.

7. Claims 14 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kruspe et al. in view of Kruspe et al. (USP 6,637,524).

Kruspe et al. does not disclose a non-rotating stabilizer being deployed on each side of the first sensor cooperating to form the vibrational node. Kruspe et al. (USP 6,637,524 teaches a non-rotating stabilizer being deployed on each side of a NMR sensor (see figure 13) in order to reduce the vibration of the NMR assembly (see column 12 lines 19-28, which would inherently form a vibrational node). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Kruspe et al. by including a stabilizer on each side of the NMR sensor as taught by Kruspe et al. (USP 6,637,524) in order to reduce the vibration of the NMR assembly.

8. Claims 33 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kruspe et al.

With respect to claims 33 and 36, Kruspe et al. does not disclose that the vibrational node has been analytically predicted. However, it would have been obvious to one having ordinary skill in the art at the time of the invention to analytically predict where the vibrational node would be to determine the best position to place the stabilizer sleeve in order to minimize vibration on the sensor.

Allowable Subject Matter

8. Claims 12 and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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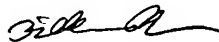
shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicole Coy whose telephone number is 571-272-5405. The examiner can normally be reached on M-F 7:30-5:00, 1st F off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

nac


William Neuder
Primary Examiner